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Traditional bone setter's gangrene

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Abstract Traditional bone setter's gangrene (TBSG) is the term we use to describe the sequelae sometimes seen after treatment with native fracture splints. Twenty five consecutive complications were recorded in 25 patients aged between 5–50 years with a median age of 10 years. The major complication of the native fracture splint treatment was distal limb gangrene necessitating proximal amputations in 15 cases.

Résumé La gangrène causée par la fixation traditionelle des fractures est le mot que nous utilisons pour décrire la sequelle due a l'utilisation de l'attelle fabriquée de facon traditionelle par des bambous. Cependant, l'implication de cette pratique commune n'a pas été étudié objectivement. Vingt cinq complications consécutives ont été reportées sur 25 patients agés entre 5–50 ans avec la moyenne d'age de 10 ans. Le rapport entre mâle et femélle était 4:1. La complication majeure de l'utilisation de l'attelle pour fracture était la gangréne de la partie distale du membre nécessitant d'amputer dans 15 (60%) des cas étudiés.

Introduction

In Nigeria treating fractures with the application of bamboo stick splint is a traditional practice that often resulted in iatrogenic limb gangrene and amputation [1, 2].

The objective of this study is to highlight our experience with the management of the complications of the traditional bone setter's treatment of fractures.

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Patients and methods

Over a 3 year period from April, 1994 to October, 1997, twenty five consecutive complications of limb fractures managed by traditional bone setters were studied.

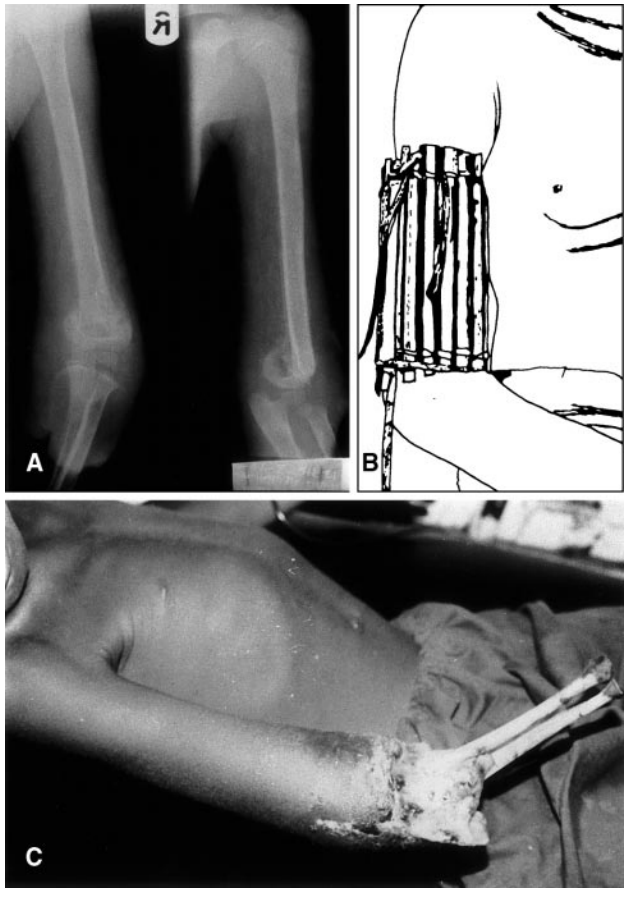

Fig. 1A–C Management of the complications of the native fracture splint: **A** A 7-year-old male sustained a closed supracondylar fracture in a domestic accident and was subjected to the traditional bone setter's treatment **B**. He was presented 3 weeks post-injury with a neglected limb gangrene, resulting in iatrogenic disarticulation of the wrist, severe soft tissue loss, exposed necrotic bones and wound sepsis **C**

Table 1 The clinical characteristics of the patients

No	Age (years)	Sex (M/F)	Fractures		
			Aetiology	Diagnosis	Complication
1	5	M	Domestic fall	Supracondylar fracture of the right humerus	Gangrene
2	6	M	Domestic fall	Right elbow fracture dislocation	Cellulitis
3	10	M	Domestic fall	Supracondylar fracture of the right humerus	Gangrene
4	25	F	Road accident	Shaft fracture of the right humerus	Compartment sydrome
5	10	M	Domestic fall	Supracondylar fracture of the right humerus	Gangrene
6	50	M	Road accident	Shaft fracture of the right Femur	Cellulitis
7	10	F	Domestic fall	Supracondylar fracture of the right humerus	Gangrene
8	6	M	Domestic fall	Left elbow fracture dislocation	Gangrene
9	10	M	Domestic fall	Supracondylar fracture of the right humerus	Gangrene
10	11	M	Road accident	Supracondylar fracture of the right humerus	Compartment sydrome
11	20	M	Road accident	Shaft fracture of the right tibia	Compartment sydrome
12	10	F	Domestic fall	Right elbow fracture dislocation	Gangrene
13	10	M	Domestic fall	Supracondylar fracture of the right humerus	Cellulitis
14	10	M	Road accident	Supracondylar fracture of the right humerus	Gangrene
15	7	F	Domestic fall	Supracondylar fracture of the right humerus	Gangrene
16	8	M	Road accident	Right elbow fracture dislocation	Compartment sydrome
17	45	M	Road accident	Shaft fracture of the left femur	Cellulitis
18	10	M	Domestic fall	Supracondylar fracture of the right humerus	Gangrene
19	30	M	Road accident	Shaft fracture of the left tibia	Compartment sydrome
20	10	F	Road accident	Supracondylar fracture of the left humerus	Gangrene
21	7	M	Domestic fall	Supracondylar fracture of the right humerus	Gangrene
22	5	M	Domestic fall	Supracondylar fracture of the right humerus	Cellulitis
23	10	M	Domestic fall	Supracondylar fracture of the right humerus	Gangrene
24	7	M	Road accident	Right elbow fracture dislocation	Gangrene
25	10	M	Domestic fall	Supracondylar fracture of the right humerus	Gangrene

Results

The median age of the patient was 10 (5–50) years. There were 20 children and 5 adults. The male to female ratio was 4:1.

The aetiological factors of the fractures were domestic falls and road accidents. The clinical characteristics of the patients are shown in Table 1. In all cases with gangrene proximal amputation was the final mode of treatment. A typical presentation of the complications of the native fracture splint is shown in Fig. 1. Patients presenting with compartment syndrome were all treated by fasciotomy and elevation of the limb. Patients with splint cellulitis, were treated by elevation of the affected limb and antibiotic therapy. There was no mortality. During the same period, 1,248 fractures of similar character were treated in the hospital.

Discussion

Patients were taken to the traditional bone setter's home by parents or relatives (usually grandparents) for treatment. The traditional bone setters apply the tourniquet bamboo stick splint over the acutely injured limb. The tightly applied splint is often left in place for the first 2–3 days before it is intermittently released for treatment with herbs and massage. This mode of treatment often resulted in compartment syndrome due to the tourniquet effect of the bamboo stick splint.

The stereotyped traditional method of fracture treatment with bamboo stick splint is extensively practised throughout Nigeria as part of culture; more so, the practice is readily available, accessible, affordable and acceptable by the natives.

The problems of the traditional management of fractures stem from the fact that, traditional bone setters have kept their practice as a family secret with claims that the skill and experience are acquired as part of ancestral heritage. Today, there is a need for improvement in this cultural practice. A plea is therefore made for international health agencies to assist the government in Nigeria as well as other developing countries with this particular problem to establish effective management of acute trauma. The establishment of regional trauma centres with integrated primary care in district hospitals is advocated. The need to educate and train the traditional bone setters to assume the position of the Traditional Orthopaedic Attendance (TOA) in the primary trauma care centres is long overdue. This strategy will go a long way to alleviate the suffering of trauma victims in the developing countries. This will bridge both the cultural and conventional values of trauma management in our environment. In addition trauma victims should be educated to seek treatment in the approved trauma centres.

References

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